

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Wang, et al.	)	Group Art Unit: 1644
App. No.	:	10/099,782	)	
Filed	:	March 14, 2002	)	
For	:	UTILIZATION OF FPRL1 AS A FUNCTIONAL RECEPTOR BY SERUM AMYLOID A (SAA)	)	RECEIVED  NOV 0 5 2002  TECH CENTER 1600/2900
Examiner	:	Unknown	, , ,	FOLL OF LAIFIL 1000) E000

## INFORMATION DISCLOSURE STATEMENT

United States Patent and Trademark Office P.O. Box 2327 Arlington, VA 22202

Dear Sir:

Enclosed is form PTO-1449 listing references that are also enclosed. This Information Disclosure Statement is being filed before the receipt of a first Office Action on the merits, and presumably no fee is required in accordance with 37 C.F.R. § 1.97(b)(3). If a first Office Action on the merits was mailed before the mailing date of this Statement, the Commissioner is authorized to charge the fee set forth in 37 C.F.R. § 1.17(p) to Deposit Account No. 11-1410.

Respectfully submitted,

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ATTY. DOCKET NO. NIH173.001C1

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U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
	1.	5,318,958	6/7/94	Kisilevsky			
	2.	5,508,384	4/16/96	Murphy et al.			

			FOREIGN PATENT DOCUMENTS				
EXAMINER	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANS	LATION
INITIAL						YES	NO

EXAMINE R INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
	Ali, H., et al. (1993) Differences in Phosphorylation of Formylpeptide and C5a Chemoattractant Receptors Correlate with Differences in Desensitization. J. Biol. Chem. 268(32):24247-24254.
	Ali, H., et al. (1996) Thrombin Primes Responsiveness of Selective Chemoattractant Receptors at a Site Distal to G Protein Activation. J. Biol. Chem. 271(6):3200-3206.
	Ali, H., et al. (1998) Differential Regulation of Formyl Peptide and Platelet-activating Factor Receptors. J. Biol. Chem. 273(18):11012-11016.
	Badolato, R., et al. (1994) Serum Amyloid A Is a Chemoattractant: Induction of Migration, Adhesion, and Tissue Infiltration of Monocytes and Polymorphonuclear Leukocytes. J. Exp. Med. 180:203-209.
	Badolato, R., et al. (1995) Serum Amyloid A Induces Calcium Mobilization and Chemotaxis of Human Monocytes by Activating a Pertussis Toxin-Sensitive Signaling Pathway. J. Immunol. 155:4004-4010.
	Bao, L., et al. (1992) Mapping of Genes for the Human C5a Receptor (C5AR), Human FMLP Receptor (FPR), and Two FMLP Receptor Homologue Orphan Receptors (FPRH1, FPRH2) to Chromosome 19. Genomics 13:437-440.
	9. Ben-Baruch, A., et al. (1995) Monocyte Chemotactic Protein-3 (MCP3) Interacts with Multiple Leukocyte Receptors. J. Biol. Chem. 270(38):22123-22128.
	Berger, E. A. (1997) HIV entry and tropism: the chemokine receptor connection. AIDS 11(Suppl A):S3-S16.
	Colgan, S. P., et al. (1993) Lipoxin A <sub>4</sub> Modulates Transmigration of Human Neutrophils across Intestinal Epithelial Monolayers. J. Clin. Invest. 92:75-82.
	Deng, X., et al. (1999) A Synthetic Peptide Derived From Human Immunodeficiency Virus Type 1 gp120 Downregulates the Expression and Function of Chemokine Receptors CCR5 and CXCR4 in Monocytes by Activating the 7-Transmembrane G-Protein-Coupled Receptor FPRL1/LXA4R. Blood 94(4):1165-1173.
	Durstin, M., et al. (1994) Differential Expression of Members of the N-Formylpeptide Receptor Gene Cluster in Human Phagocytes. Biochem. Biophys. Res. Commun. 201(1):174-179.

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EXAMINE R	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
INITIAL	
	Falk, W., et al. (1980) A 48-well Micro Chemotaxis Assembly for Rapid and Accurate Measurement of Leukocyte Migration. J. Immunol. Methods. 33:239-247
	Fiore, S., and Serhan, C. N. (1995) Lipoxin A <sub>4</sub> Receptor Activation Is Distinct from That of the Formyl Peptide Receptor in Myeloid Cells: Inhibition of CD11/18 Expression by Lipoxin A <sub>4</sub> -Lipoxin A <sub>4</sub> Receptor Interaction. Biochemistry 34:16678-16686.
	16. Fiore, S., et al. (1993) Induction of Functional Lipoxin A <sub>4</sub> Receptors in HL-60 Cells. Blood 81(12):3395-3403.
	17. Fiore, S., et al. (1994) Identification of a Human cDNA Encoding a Functional High Affinity Lipoxin A <sub>4</sub> Receptor.  J. Exp. Med. 180:253-260.
	18. Gao, J. L. and Murphy P. M. (1993) Species and Subtype Variants of the <i>N</i> -Formyl Peptide Chemotactic Receptor Reveal Multiple Important Functional Domains. J. Biol Chem. 268(34):25395-25401.
	19. Gerwirtz, A. T., et al. (1998) Pathogen-induced Chemokine Secretion from Model Intestinal Epithelium is Inhibited by Lipoxin A <sub>4</sub> Analogs. J. Clin. Invest. 101:1860-1869.
	20. / Gong, W., et al. (1998) Monocyte Chemotactic Protein-2 Activates CCR5 and Blocks CD4/CCR5-mediated HIV-1 Entry/Replication. J. Biol. Chem. 273:4289-4292
	Gong, X., et al. (1997) Monocyte Chemotactic Protein-2 (MCP-2) Uses CCR1 AND CCR2B as Its Functional Receptors. J. Biol. Chem. 272:11682-11685
	Gronert, K., et al. (1998) Identification of a Human Enterocyte Lipoxin A <sub>4</sub> Receptor That Is Regulated by Interleukin (IL)-13 and Interferon γ and Inhibits Tumor Necrosis Factor α-induced IL-8 Release. J. Exp. Med. 187:1285-1294
	Kisilevsky, R. (1991) Serum Amyloid A (SAA), a Protein without a Function: Some Suggestions with Reference to Cholesterol Metabolism. Med. Hypotheses 35:337-341.
	Le, Y., et al. (1999) A new insight into the role of "old" chemotactic peptide receptors FPR and FPRL1: down-regulation of chemokine receptors CCR5 and CXCR4. Forum 9:299-314.
	Lee, T. H., et al. (1991) Inhibition of Leukotriene B <sub>4</sub> -Induced Neutrophil Migration by Lipoxin A <sub>4</sub> : Structure-Function Relationships. Biochem. Biophys. Res. Commun. 180(3):1416-1421.
	26. Liang, J. and Sipe, J. D. (1995) Recombinant human serum amyloid A (apoSAA <sub>p</sub> ) binds cholesterol and modulates cholesterol flux. J. Lipid Res. 36:37-46.
	27. Linke, R. P., et al. (1991) Inhibition of the Oxidative Burst Response of N-formyl Peptide-Stimulated Neutrophils by Serum Amyloid-A Protein. Biochem. Biophys. Res. Commun. 176(3):1100-1105.
	Maddox, J. F., et al. (1997) Lipoxin A <sub>4</sub> Stable Analogs Are Potent Mimetics That Stimulate Human Monocytes and THP-1 Cells via a G-protein-linked Lipoxin A <sub>4</sub> Receptor. J. Biol. Chem. 272(11):6972-6978.
	Malle, E. and De Beer, F. C. (1996) Human serum amyloid A (SAA) protein: a prominent acute-phase reactant for clinical practice. Eur. J. Clin. Invest. 26:427-435.
	Murphy, P. M. (1996) The <i>N</i> -formylpeptide Chemotactic Receptor. <i>In</i> Chemoattractant Ligands and Their Receptors. CRC Press, Boca Raton, FL p. 269-299.
	Murphy, P. M. and McDermott, D. (1991) Functional Expression of the Human Formyl Peptide Receptor in Xenopus Oocytes Requires a Complementary Human Factor. J. Biol. Chem. 266(19):12560-12567.
	Murphy, P. M., et al. (1992) A Structural Homologue of the N-Formyl Peptide Receptor. J. Biol. Chem. 267(11):7637-7643.

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EXAMINE R INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
	Nomura, H., et al. (1993) Molecular cloning of cDNAs encoding a LD78 receptor and putative leukocyte chemotactic peptide receptors. Int. Immunol. 5(10):1239-1249.
	Oppenheim, et al. (England trip 1998) Cytokines and Chemokines in Rheumatoid Arthritis. Oliver Bird Fund 50 <sup>th</sup> Anniversary Conference, Churchill College Cambridge 24-26 September 1998.
	Owman, C., et al. (1998) The leukotriene B <sub>4</sub> receptor functions as a novel type of coreceptor mediating entry of primary HIV-1 isolates into CD4-positive cells. PNAS USA 95(16):9530-9534.
	Prossnitz, E. R. and Ye, R. D. (1997) The <i>N</i> -Formyl Peptide Receptor: A Model for the Study of Chemoattractant Receptor Structure and Function. Pharmacol. Ther. 74:73-102.
	Romano, M., et al. (1996) Activation of Human Monocytes and the Acute Monocytic Leukemia Cell Line (THP-1) by Lipoxins Involves Unique Signaling Pathways for Lipoxin A <sub>4</sub> Versus Lipoxin B <sub>4</sub> . J. Immunol. 157:2149-2154.
	38. Samuelsson, B., et al. (1987) Leukotrienes and Lipoxins: Structures, Biosynthesis, and Biological Effects. Science 237:1171-1176.
	39./ Sipe, J. D. (1990) The Acute-Phase Response. <i>In</i> Immunophysiology: The Role of Cells and Cytokines in Immunity and Inflammation. J.J. Oppenheim and E.M. Schevach. Editors. Oxford University Press. New York 259-273.
	40. / Skinner, M. (1992) Protein AA/SAA. J. Intern. Med. 232:513-514.
	Steel, D. M., et al. (1996) Expression and Regulation of Constitutive and Acute Phase Serum Amyloid A mRNAs in Hepatic and Non-Hepatic Cell Lines. Scand. J. Immunol. 44:493-500.
	42. Steinkasserer, A., et al. (1990) Heterogeneity of human serum amyloid A protein. Biochem. J. 268:187-193.
	Su, S. B., et al. (1999) A Seven-transmembrane, G Protein-coupled Receptor, FPRL1, Mediates the Chemotactic Activity of Serum Amyloid A for Human Phagocytic Cells. J. Exp. Med. 189:395-402.
	Su, S. B., et al. (1999) T20-DP178, an Ectodomain Peptide of Human Immunodeficiency Virus Type 1 gp41, Is an Activator of Human Phagocyte N-Formyl Peptide Receptor. Blood 93(11):3885-3892.
	Su, S. B., et al. (1999) T21/DP107, A Synthetic Leucine Zipper-Like Domain of the HIV-1 Envelope gp41, Attracts and Activates Human Phagocytes by Using G-Protein-Coupled Formyl Peptide Receptors. J. Immunol. 162:5924-5930.
	Takano, T., et al. (1997) Aspirin-triggered 15-Epi-Lipoxin A <sub>4</sub> (LXA <sub>4</sub> ) and LXA <sub>4</sub> Stable Analogues Are Potent Inhibitors of Acute Inflammation: Evidence for Anti-inflammatory Receptors. J. Exp. Med. 185(9):1693-1704.
	Takano, T., et al. (1998) Neutrophil-mediated Changes in Vascular Permeability Are Inhibited by Topical Application of Aspirin-triggered 15-epi-lipoxin A <sub>4</sub> and Novel Lipoxin B <sub>4</sub> Stable Analogues. J. Clin. Invest. 101(4):819-826.
	Wang, J. M., et al. (1993) Identification of RANTES Receptors on Human Monocytic Cells: Competition for Binding and Desensitization by Homologous Chemotactic Cytokines. J. Exp. Med. 177:699-705.
	49. Wang, J. M., et al. (1999) FASEB J. Exp. Biol. Abstracts, Part II, p. A656.
	50. Xu, L., et al. (1995) A Novel Biologic Function of Serum Amyloid A. J. Immunol. 155:1184-1190.
	Ye, R. D., et al. (1992) Isolation of a cDNA that encodes a novel granulocyte N-formyl peptide receptor. Biochem. Biophys. Res. Commun. 184(2):582-589.
	52. / Yokomizo, T., et al. (1997) A G-protein-coupled receptor for luekotriene B <sub>4</sub> that mediates chemotaxis. Nature 387:620-624.

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